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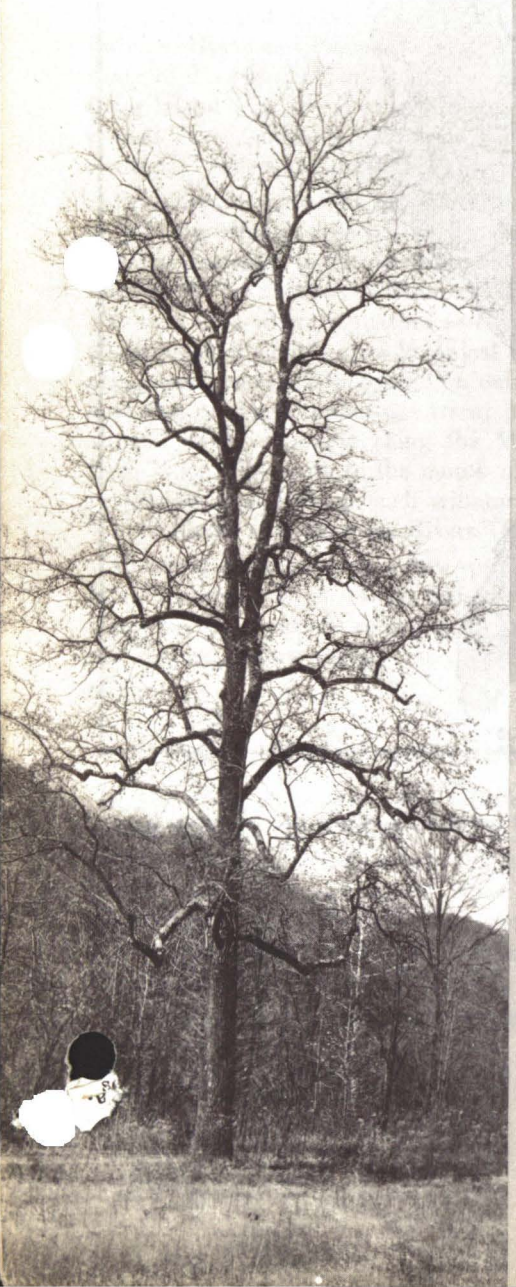
COMMON PERSIMMON



Persimmon is a member of the ebony family, of which some 300 species are recognized, only two of them native to the United States. Common persimmon grows throughout an extensive area in the southeastern United States. The wood is uniform in texture, is hard, and stays smooth under long, continued friction. Its principal commercial uses are for golf club heads and for shuttles; it is also used as sliced veneer in furniture. The wood is scarce, and supplies are not being replenished as fast as they are being used.

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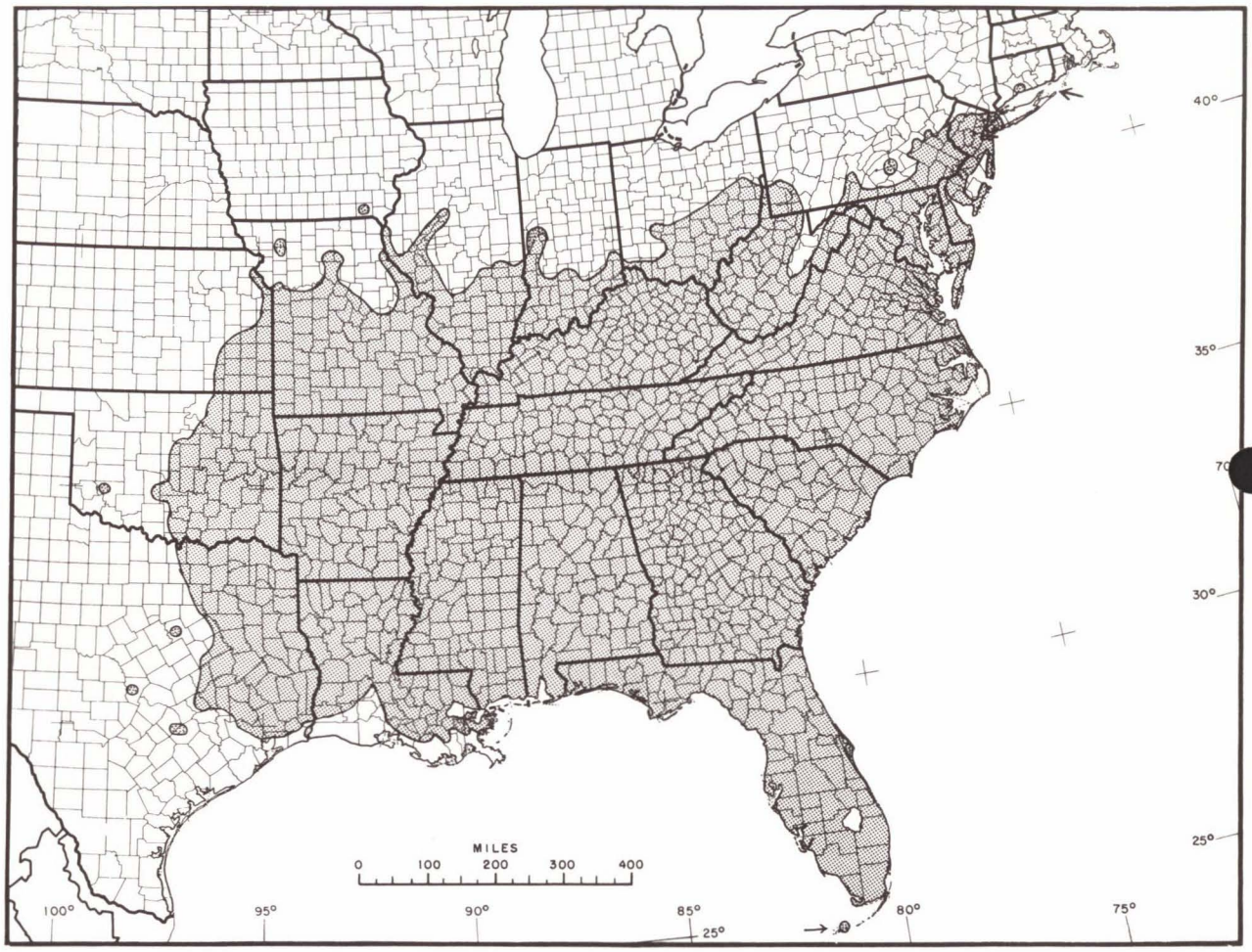

F-506590

Figure 1.—Natural range of common persimmon. (County lines do not necessarily reflect precise range.)

COMMON PERSIMMON

(Diospyros virginiana)

Louis C. Maisenhelder[1]

DISTRIBUTION

The common persimmon grows over all the Southern States and west to eastern Texas, Oklahoma, and Kansas. It is also widespread in southern Missouri, Illinois, Indiana, Ohio, and Pennsylvania (except in the main range of the Appalachian Mountains), New Jersey, and Long Island (fig. 1). It grows in small local areas in central Texas, southern Oklahoma, northern Missouri, southern Iowa, and Connecticut.

Persimmon grows to commercially important size only in the alluvial type bottom lands and terraces of the larger streams in the South and along the Atlantic seaboard as far north as the Roanoke River in Virginia. The total area where it reaches saw-timber size equals about one-half of its entire botanical range. However, commercial cutting is practiced on only about half the area that produces timber-size trees; it is restricted to alluvial stream bottoms along the Mississippi River from Cairo, Ill., south to the mouth of the Red River in Louisiana and along such tributaries as the Red, White, Black, and Arkansas Rivers (fig. 1).

Common persimmon is a key species in the Sassafras-Persimmon Type (Type 64). Its common associates are elms, eastern redcedar, hickories, sugar and red maples, yellow-poplar, oaks, boxelder, and sycamore.

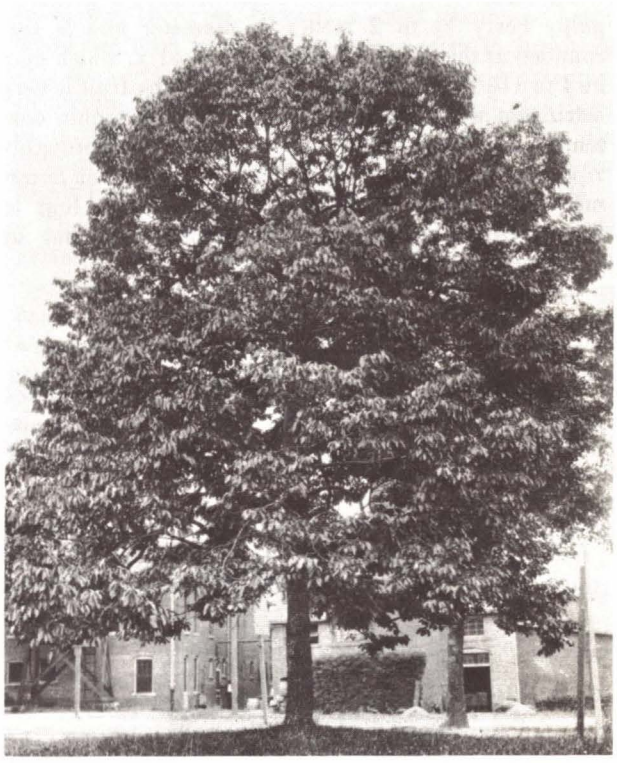

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Figure 2.—Open-grown persimmon.

DESCRIPTION AND GROWTH

On the better sites (wet flats, shallow sloughs, and swamp margins) persimmon grows to heights of 30 to 60 feet or more and to diameters of 12 to 24 inches. On poorer, drier sites and on old fields in the uplands, occurrence is sparse. Here the tree grows slowly and is a weed; its growth is shrubby, and mature trees are usually only 15 to 20 feet tall (fig. 2).

Persimmon is a rather heavy seeder and normally bears good seed crops about every 2 years. Some trees start bearing seed as early as age 10, but the optimum seed bearing age is between 25 and 50 years. Seed is disseminated by birds and animals that feed on the fruit and by overflow water in the bottom lands. Germinative capacity is about 60 percent. The seedlings are very tolerant and occur frequently in the understory, but their growth rate there is poor. Seedlings develop a strong taproot their first year and may grow as much as 8 inches. Older trees, especially if growing in poor, thin soil, have shallow root systems.

[1] Retired. Formerly silviculturist, Southern Forest Experiment Station, USDA Forest Service.

Besides natural seeding, persimmon may be propagated by using root cuttings and by grafting. Stumps sprout readily; so thickets of shrubby persimmon often develop from root suckers, especially on poorer sites. After fires, sprouting from the root collar is common. Stands vary from single trees to small groups mixed with other species; pure stands never occur. Trees of all ages and sizes are found in the same stand.

The leaves, 4 to 6 inches long by 2 to 3 inches wide, are simple, alternate, and oblong to elliptic with entire margins. They are glabrous, dark green, and lustrous on the upper surface, paler below (fig. 3). Bark on trunks of older trees is almost black, is about one-fourth inch thick, and is separated by deep fissures into nearly square blocks—"alligator" bark (fig. 4).

The fruit is a yellow, orange, or brown globular, pulpy berry 3/4 to 2 inches in diameter and is surrounded at the base by the spreading calyx, which may be 1 to 1½ inches in diameter (fig. 5). The fruit is very astringent while green because of its high tannin content, but it turns sweet and edible when thoroughly ripe after frost. Sometimes it is used in preparing homemade drinks and foods. Each fruit contains four to eight medium brown, flat seeds one-half inch long by one-fourth inch wide.

COMMON NAMES

Common persimmon is the popular name recognized by the USDA Forest Service, but the species is also frequently referred to as persimmon or eastern persimmon. The species *D. texana* is preferably referred to as Texas persimmon but is also called chapote, black persimmon, or Mexican persimmon.

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Figure 3.—Leaves and flowers of common persimmon (natural size).

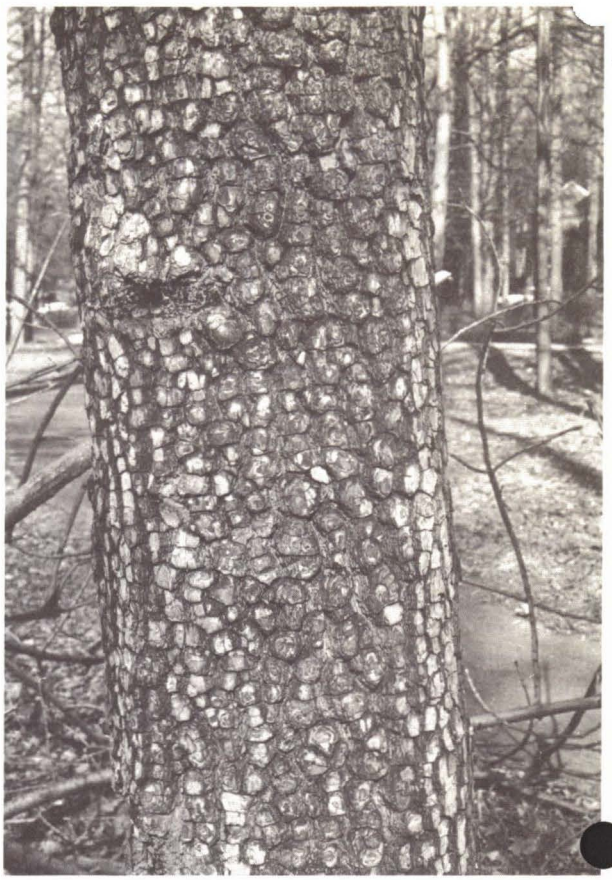

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Figure 4.—Bark of common persimmon. (This trunk is about 12 inches in diameter.)

SUPPLY

A rough estimate of the total stand of persimmon in the early 1940's placed the volume at some 330 million board feet. A considerable volume of unmerchantable wood and of material too widely scattered to be operable probably was included in that estimate. Since then the supply has been reduced considerably by harvest of old-growth trees; replacement is taking place very slowly.

No recent reliable information about the present stand of persimmon is readily available. In most surveys, this species, because of its scattered occurrence, is usually tallied as "miscellaneous" and is combined with several other species, so its identity is lost.

Stands having considerable volume remain in southern portions of Louisiana, Mississippi, Alaba

F-491043

Figure 5.—Fruit of common persimmon (natural size).

and in northern Florida, but the wood of trees in this Gulf region is not dense enough to make good golf club heads or shuttles. Industries using persimmon now need to find a suitable substitute, either wood or some other material. In tests made so far, cedar elm *(Ulmus crassifolia)* seems to offer the best possibility.

PRODUCTION

The total volume of persimmon bolts used in manufacturing in 1960 was reported as 3.9 million board feet, lumber equivalent. Of this, 3.3 million feet were utilized for golf club heads and shuttle blocks, and roughly 600 thousand board feet went into hardwood dimension and flooring. The production figure has fluctuated greatly since Bureau of the Census Reports were begun in 1907; but in general it was increasing until the early 1960's. Production levelled off then because the supply of wood that was economically available and of suitable quality declined.

Most operable commercial stands are within a 200- to 300-mile radius from Memphis, Tenn. Three of the four main plants that use persimmon are located in or near that city, and the other, a sliced veneer plant, is in southern Indiana. In 1966 the estimated annual consumption by these plants was 4 million board feet, Doyle scale; of this, 2.5 million board feet became stock for golf club heads and shuttle blocks of all kinds; the remaining 1.5 million board feet went into lumber and veneer. No separate figures for the lumber and veneer volumes are available.

CHARACTERISTICS AND PROPERTIES

The sapwood of persimmon is the raw material for the chief commercial products. It is creamy white when first cut, but darkens to grayish or yellow-brown after exposure to air. The heartwood, which almost always includes only a small part of the volume of the stem, is usually discarded because it checks exessively during seasoning. However, recently a small amount of heartwood has been used for decorative inlay in furniture. It is dark brown to jet black and is generally irregular in outline. Annual growth rings, composed of a band of springwood and a band of summerwood, are distinguishable but not prominent. Bolts with sapwood bands less than 4 inches wide are not merchantable.

The wood is uniform in texture, mostly straight grained, and becomes very smooth under wear—a necessary attribute for its use in shuttles. The density varies, which largely determines whether or not the wood can be used: Good golf-club-head or shuttleblock stock weighs 23 pounds or more per cubic foot after drying. Material as light as 21 pounds can be utilized, but wood any lighter cannot be used for these products.

Persimmon shrinks considerably and requires great care in seasoning to prevent checking of blocks from which shuttles or golf club heads are to be manufactured. Once properly seasoned, it ranks high in ability to stay in place. The wood is stiff, strong, heavy, hard, and has high shock-resisting ability. It is hard to work with tools, does not glue easily, and is not durable if used under conditions favorable to decay.

PRINCIPAL USES

Persimmon has very limited use because of its special qualities and short supply. Its principal and almost exclusive use is for golf club heads and shuttles for textile weaving. Since golf club heads are the preferred product, usually only wood of a grade not suitable for them is diverted for making shuttle blocks. Only the white sapwood free of all defects is suitable for golf club heads. The ability of persimmon shuttles to remain smooth and develop a highly polished surface under friction, combined with their shock resistance and hardness, makes them a much sought after product. Shuttles are all sold on the export market, many of them being consigned to India and Pakistan; the domestic market demands shuttles made from dogwood.

The most recent new use for persimmon is for making flat-sliced veneer used as face material in furniture. When finished, it strongly resembles walnut but is marketed as persimmon or under some exotic name such as "Mediterranean holly."

Small amounts of the wood are cut for lumber to be remanufactured into interior trim and various novelty items. The wild persimmon fruit is sometimes used as feed for stock and wildlife, but fruit of cultivated varieties is sold as a specialty.

REFERENCES

Betts, H. S.
1945. Persimmon (*Diospyros virginiana*). U. S. Forest Serv. Amer. Woods, 4 p., illus.

Gill, Thomas G., and Phelps, Robert B.
1969. Wood used in manufacturing industries, 1965. U. S. Dep. Agr., Forest Serv. Stat. Bull. 440, 101 p., illus.

Harlow, William M., and Harrar, Ellwood S.
1968. Textbook of dendrology. Ed. 5, 512 p., illus. Amer. Forestry Series. New York: McGraw-Hill Book Co.

Little, Elbert L., Jr.
1953. Check list of native and naturalized trees of the United States (including Alaska). U. S. Dep. Agr., Agr. Handb. 41, 472 p.

Society of American Foresters
1954. Forest cover types of North America (exclusive of Mexico). 67 p. Washington, D. C.

U. S. Forest Service
1965. Silvics of forest trees of the United States. U. S. Dep. Agr., Agr. Handb. 271. 762 p., illus.

———
1948. Woody-plant seed manual. U. S. Dep. Agr. Misc. Pub. 654, 416 p., illus.

Vines, R. A.
1960. Trees, shrubs, and woody vines of the Southwest. 1104 p., illus. Austin: Univ. Texas Press.

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